

P21273.A08



Application No. 09/926,600

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant :Kenji ABIKO

Group Art Unit: AU 1742

Appl. No. : 09/926,600

Examiner: Wilkins

Filed : November 26, 2001

For :Cr-BASED ALLOY HAVING AN EXCELLENT STRENGTH-  
DUCTILITY BALANCE AT HIGH TEMPERATURES

**REPLY BRIEF UNDER 37 C.F.R. §1.193(b)(1)**

Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

Sir:

This Reply Brief is in response to the Examiner's Answer dated January 6, 2004, the period for reply extending until March 6, 2004.

In the Examiner's Answer, the Examiner maintains the grounds of rejection advanced in the final rejection and provides arguments in support thereof. In addition, the Examiner has raised new issues and provided summary of Appellant's arguments in the Examiner's Answer which prompted this Reply Brief.

Appellant notes that this Reply Brief is being filed under 37 C.F.R. §1.193(b)(1) and is directed to the arguments presented in the Examiner's Answer, and is therefore must be entered unless the final rejection is withdrawn in response to the instant Reply Brief. With regard to this Reply Brief, Appellant notes that they are addressing points made in the Examiner's Answer and not repeating the arguments set forth in the Appeal Brief.

### **POINTS OF ARGUMENT**

#### **First Issue**

In responding to Appellant's arguments a and c as summarized by the Examiner on page 5, the Examiner alleges in the last paragraph on page 5, that "it is unclear if there really is an unexpected change in the properties of the alloy from 60wt% to e.g.- 60.1%. While Appellant has demonstrated superior results of strength and toughness compared to an alloy exemplary of the range of Fujisawa, the unexpected results are not demonstrated in a range commensurate in scope with the presently claimed range."

Appellant respectfully submits that Table 2 of the specification clearly demonstrates that when Cr exceeds 60%, there are substantial increases in the alloy's TS and RaxTs values, especially at higher temperature. This unexpected result is clearly commensurate in scope with the claims which in part recite "Cr: exceeding 60 mass %." Even assuming that the specification does not compare the results between 60% and 60.01% of Cr, such comparison is not necessary because the cited documents

teach away from the presence of Cr in amounts exceeding 60 mass%.

### **Second Issue**

The Examiner alleges in the last paragraph of page 6 that the rejection relies on the method and in turn, the results of the method of Abiko.

Appellant respectfully submits that the method of Abiko again teaches away from using Cr in amounts greater than 60% and therefore, the method of Abiko would result in the product outside the claims of the present invention.

### **Third Issue**

The Examiner also alleges that “there is no actual technical reason given by Abiko that the process could not be applied to alloys with a Cr content above 60%.”  
(Page 7, lines 4-5)

Appellant again respectfully submits that the Examiner is employing an incorrect standard in examining the patentability of the claims. To render a claim anticipated or obvious, the cited document must either disclose all the recitations of the claim or provide a suggestion or motivation to change the disclosure to satisfy the claim.

Further, and with regard to the incorrect standard being imposed with respect to Abiko, the question is not whether the document must give a technical reason why the process could not be applied to alloys with a Cr content of above 60 wt%, the question is, is it obvious to do so.

**Fourth Issue**

Regarding Appellant's argument that Abiko teaches away from "Cr exceeding 60 mass %," the Examiner also states that "it is not a direct teaching away, since the suggestion is merely for economic reasons, and there is a compelling reason in the prior art to increase the Cr above 60 wt.%, that being to achieve greater strength." (Page 7, lines 17-19)

Appellant respectfully submits that there is no requirement that the "teaching away" be "direct." The questions whether, in view of the "teaching away" art, one of ordinary skill in the art would not be motivated to change the disclosure to arrive at the invention. The compelling reason, as alleged by the Examiner, is contradictory to the disclosed economic reason.

Thus, the rejection is imposing an improper standard in this regard, as well. In general, "a reference will teach away if it suggests that the line of development flowing from the reference's disclosure is unlikely to be productive of the result sought by the applicant." Baxter International, Inc. et al. v. McGaw, Inc., 47 USPQ2d 1225, 1230 (Fed. Cir. 1998). A prior art reference may be considered to teach away when "a person of ordinary skill, upon reading the reference, would be discouraged from following the path set out in the reference, or would be led in a direction divergent from the path that was taken by the applicant." Monarch Knitting Machinery Corp. et al. v. Sulzer Morat GmbH et al., 45 USPQ2d 1977, 1984 (Fed. Cir. 1998); In re Gurley, 27 F.3d 551, 553,

31 USPQ2d 1130, 1131 (Fed. Cir. 1994). General skepticism of those in the art - not amounting to teaching away - is also “relevant and persuasive evidence” of nonobviousness. Gillette Co. v. S.C. Johnson & Son, Inc., 919 F.2d 720, 726, 16 USPQ2d 1923, 1929 (Fed. Cir. 1990). In effect, “teaching away” is a more pointed and probative form of skepticism expressed in the prior art. In any case, the presence of either of these indicia gives insight into the question of obviousness.

Moreover, as stated above, when a rejection depends on a combination of prior art references, the PTO must show that there is some teaching, suggestion, or motivation to combine the references. In re Fine, 837 F.2d 1071, 1074, 5 USPQ2d 1596, 1598 (Fed. Cir. 1988). In other words, to “establish a prima facie case of obviousness, [the challenger to patentability] must show 'some objective teaching in the prior art or that knowledge generally available to one of ordinary skill in the art would lead that individual to combine the relevant teachings of the references.'” Tec Air, Inc. v. Denso Manufacturing Michigan Inc., 52 USPQ2d 1294, 1298 (Fed. Cir. 1999) (quoting Fine, 837 F.2d at 1074, 5 USPQ2d at 1598). “There is no suggestion to combine, however, if a reference teaches away from its combination with another source.” Id. Here, as discussed above, Abiko actually teaches away from a Cr content above 60%. In other words, any motivation provided by Abiko is to stay away from Cr exceeding 60%.

Further, Appellant respectfully submits that Abiko clearly describes that “even if Cr is added by exceeding 60wt%, its effect is saturated and economically

disadvantageous.” If anything, this emphasizes Abiko’s failure to recognize the presence of Cr: exceeding 60 mass% as a result-effective variable. Under the law, a particular parameter must first be recognized as a result-effective variable, that is, a variable which achieves a recognized result, before the "optimization" of such variable amounts to obviousness. In re Antonie, 195 U.S.P.Q. 6, 8 (C.C.P.A. 1977); In re Boesch and Slaney, 205 U.S.P.Q. 215, 219 (C.C.P.A. 1980). Accordingly, this rejection is not sustainable.

#### **Fifth Issue**

Regarding the Examiner’s response to Appellant’s arguments b and e as summarized by the Examiner on page 5, the Examiner alleges that Appellants argue that Fujisawa and Abiko teaches that additional elements must be present

Appellant respectfully submits that this is not Appellant’s position. Appellant does not argue that Fujisawa requires addition of any other element. Fujisawa relates to a technique for attaining improvement of workability, pitting resistance, corrosion resistance, acid resistance and oxidation resistance by adding an additional element on the condition that the Cr is limited to not more than 60wt%. In other words, Fujisawa does not teach, disclose or suggest Cr exceeding 60wt%.

Furthermore, Abiko controls Cr to not more than 60wt% because even if Cr exceeding 60wt% is added, its effect is saturated, and adds substitutional solid solution reinforced elements such as Mo, W, Nb, Ta, Zr, and the like. Therefore, Abiko does not

teach, disclose, or suggest Cr exceeding 60wt%.

### **Sixth Issue**

With respect to Examiner's Response to Arguments d, f, and g, as summarized by the Examiner on Page 5, Appellants respectfully notes that Shida's invention describes that N and O exert a bad influence upon property of high Cr alloy at elevated temperature as the Examiner alleges at the last paragraph of Page 6. However, in Shida, the amounts to be controlled for removing the bad influence are not more than 2000 ppm of N and not more than 2000 ppm of O, which are incomparable with that of the present claims (C+N of not more than 20 ppm, O not more than 100 ppm). The reason why such large amount of N and O in Shida are allowed is because Shida's invention is used in casting, and therefore, workability is not required. Therefore, decreasing amounts of N and O for improving workability are also not required.

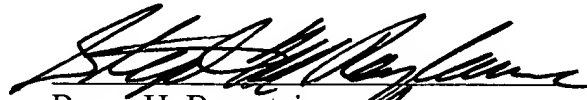
Furthermore, the Examiner recognizes that the art at the time of filing Shida's application cannot decrease N and O. However, if Shida had seen a desirability of further decreasing N and O, even at that time, amounts of N and O could be decreased below the above levels by casting under an inert atmosphere. However, the fact that nothing was carried out (paragraph 0016 of Shida describes that casting was carried out in the atmosphere but does not describe any measure of decreasing N and O) is a clear indication that there was no need to decrease N and O. Therefore, there is no motivation to combine Shida's invention (having neither the recognition nor the necessity of

decreasing amounts of N) with Abiko's invention (limiting amounts of C, N, S, and O to the extremely low zone). Therefore, this rejection is not sustainable.

### CONCLUSION

For the reasons expressed above, Appellant respectfully requests that the grounds of rejection advanced by the Examiner be reversed. Appellants further request that the application be returned to the Examining Group for prompt allowance. This Reply Brief is submitted herewith in triplicate for the convenience of the Board. Although neither a fee nor an extension of time is believed to be due with this Reply Brief, if an extension of time is necessary, Appellants respectfully request an extension of time under 37 C.F.R. §1.136(a) for as many months as would be required to render this submission timely. Further, the Commissioner is hereby authorized to charge any additional fee due to Deposit Account No. 19-0089.

Respectfully submitted,  
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3/1/2006

February 25, 2004  
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